

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently amended) A backplane for a communications system, that
2 includes a plurality of differential signal line pairs with each differential signal
3 line pair providing a communications path for a differential signal pair,
4 comprising:
 - 5 a first differential signal line pair of the plurality of differential signal line
6 pairs ~~having a first differential signal pair~~, a first differential signal line and a
7 second differential signal line, wherein each differential signal line, of the first
8 differential signal line pair, includes a first end and a second end;
 - 9 a second differential signal line pair of the plurality of differential signal
10 line pairs ~~having a second differential signal pair~~, a third differential signal line
11 and a fourth differential signal line, wherein each differential signal line, of the
12 second differential signal line pair, includes a first end and a second end;
 - 13 a plurality of vias, including first, second, third, fourth, fifth and sixth vias,
14 wherein each via couples a differential signal line to a connector terminal;
 - 15 the first differential signal line providing a communications path for a first
16 forward signal of the first differential signal pair, wherein the first end of the first
17 differential signal line is coupled to the first via and the second end of the first
18 differential signal line is coupled to the second via;
 - 19 the second differential signal line providing a communications path for a

20 | ~~second~~ first reverse signal of the first differential signal pair, wherein the first end
21 | of the second differential signal line is coupled to the third via and the second end
22 | of the second differential signal line is coupled to the fourth via;

23 | the third differential signal line providing a communications path for a
24 | ~~third~~ second forward signal of the second differential signal pair, wherein the first
25 | end of the third differential signal line is coupled to the fifth via and the second
26 | end of the third differential signal line is coupled to the sixth via; and,

27 | wherein the first via is spatially located adjacent to the fifth via to cause
28 | the ~~third~~ second forward signal to have a first amount of coupling to the first
29 | forward signal and wherein the fourth via is spatially located adjacent to the sixth
30 | via to cause the ~~third~~ second forward signal to have a second amount of coupling
31 | to the ~~second~~ first reverse signal and wherein, without adding coupling
32 | specifically for the purpose of reducing crosstalk, the first and second amounts of
33 | coupling cause the coupling between the ~~third~~ second forward signal and the first
34 | forward signal to be substantially equal to the coupling between the ~~third~~ second
35 | forward signal and ~~second~~ first reverse signal.

1 | 2. (Currently amended) The backplane of claim 1 further including a
2 | plurality of conductor planes wherein the ~~third~~ second forward signal is on a
3 | conductor plane of the plurality of conductor planes and the first forward and
4 | ~~second~~ first reverse signals are on another conductor plane of the plurality of
5 | conductor planes.

1 | 3. (Currently amended) The backplane of claim 1 further including a
2 | plurality of conductor planes wherein the ~~third~~ second forward signal is on a
3 | conductor plane of the plurality of conductor planes and the first forward and

4 | ~~second~~ first reverse signals are on the same conductor plane of the plurality of
5 conductor planes.

1 4. (Previously presented) The backplane of claim 1 wherein the second
2 differential signal line includes a skew adjustment path located between the first
3 end and the second end.

1 5. (Previously presented) The backplane of claim 4 wherein the lengths of
2 the first and second differential signal lines of the first differential signal line pair
3 are substantially equal.

1 6. (Currently amended) The backplane of claim 1 wherein the second via
2 is spatially separated from the fifth and sixth vias such that there is substantially
3 | no coupling between the first forward and ~~third~~ second forward signals based on
4 the spatial relationship of the second, fifth and sixth vias.

1 7. (Currently amended) The backplane of claim 1 wherein the third via is
2 spatially separated from the fifth and sixth vias such that there is substantially no
3 | coupling between the ~~second~~ first reverse and ~~third~~ second forward signals based
4 on the spatial relationship of the third, fifth and sixth vias.

1 8. (Currently amended) A backplane for a communications system, that
2 includes a plurality of differential signal line pairs with each differential signal
3 line pair providing a communications path for a differential signal pair,
4 comprising:

5 | a first differential signal line pair of the plurality of differential signal line
6 | pairs having ~~a first differential signal pair~~, a first differential signal line and a
7 | second differential signal line, wherein each differential signal line, of the first
8 | differential signal line pair, includes a first end and a second end;

9 | a second differential signal line pair of the plurality of differential signal
10 | line pairs having ~~a second differential signal pair~~, a third differential signal line
11 | and a fourth differential signal line, wherein each differential signal line, of the
12 | second differential signal line pair, includes a first end and a second end;

13 | a plurality of vias, including first, second, third, fourth, fifth, sixth, seventh
14 | and eighth vias, wherein each via couples a differential signal line to a connector
15 | terminal;

16 | the first differential signal line providing a communications path for a first
17 | forward signal, wherein the first end of the first differential signal line is coupled
18 | to the first via and the second end of the first differential signal line is coupled to
19 | the second via;

20 | the second differential signal line providing a communications path for a
21 | ~~second~~ first reverse signal, wherein the first end of the second differential signal
22 | line is coupled to the third via and the second end of the second differential signal
23 | line is coupled to the fourth via;

24 | the third differential signal line providing a communications path for a
25 | ~~third~~ second forward signal, wherein the first end of the third differential signal
26 | line is coupled to the fifth via and the second end of the third differential signal
27 | line is coupled to the sixth via;

28 | the fourth differential signal line providing a communications path for a
29 | ~~fourth~~ second reverse signal, wherein the first end of the fourth differential signal
30 | line is coupled to the seventh via and the second end of the fourth differential

31 signal line is coupled to the eighth via;
32 wherein:
33 the first via is spatially located adjacent to the fifth via to cause the ~~third~~
34 second forward signal to have a first amount of coupling to the first forward
35 signal;
36 the second via is spatially located adjacent to the eighth via to cause the
37 ~~fourth~~ second reverse signal to have a second amount of coupling to the first
38 forward signal;
39 the third via is spatially located adjacent to the seventh via to cause the
40 ~~fourth~~ second reverse signal to have a third amount of coupling to the ~~second~~ first
41 reverse signal;
42 the fourth via is spatially located adjacent to the sixth via to cause the ~~third~~
43 second forward signal to have a fourth amount of coupling to the ~~second~~ first
44 reverse signal; and
45 wherein, without adding coupling specifically for the purpose of reducing
46 crosstalk, a first amount of ~~crosstalk on~~ crosstalk induced onto the first forward
47 signal, ~~that results~~ from the first amount of coupling and the second amount of
48 coupling, is substantially equal to a second amount of ~~crosstalk on~~ crosstalk
49 induced onto the ~~second~~ first reverse signal, ~~that results~~ from the third amount of
50 coupling and the fourth amount of coupling.

1 9. (Currently amended) The backplane of claim 8 further including a
2 plurality of conductor planes wherein, for each differential signal line pair, a ~~first~~
3 forward differential signal line is located on one of the plurality of conductor
4 planes and a ~~second~~ reverse differential signal line is located on another one of the

5 plurality of conductor planes.

1 10. (Currently amended) The backplane of claim 8 further including a
2 | plurality of conductor planes wherein, for each differential signal line pair, a ~~first~~
3 | forward and ~~second~~ a reverse differential signal line are located on the same one
4 of the plurality of conductor planes.

1 11. (Previously presented) The backplane of claim 8 wherein the second
2 differential signal line of the first differential signal pair includes a skew
3 adjustment path located between the first end and the second end.

1 12. (Original) The backplane of claim 11 wherein the lengths of the first
2 and second differential signal lines of the first differential signal pair are
3 substantially equal.

1 13. (Original) The backplane of claim 11 wherein the first and second
2 differential signal lines of the second differential signal pair include a layout
3 having a topology that corresponds to the topology of the skew adjustment path.

1 14. (Original) The backplane of claim 13 wherein lengths of each
2 differential signal lines of the first and second differential signal pairs are
3 substantially equal.

1 15. (Original) The backplane of claim 11 wherein lengths of each
2 differential signal lines of the first and second differential signal pairs are
3 substantially equal.